SUPPLEMENTAL ALTERNATIVES ANALYSIS REPORT

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Peninsula Rail Program Director

AUGUST 2010

Presentation Outline

- Corridor overview
- Feedback since April 8, 2010
- Further study in EIR/EIS
  - Design options
  - Stations
  - Maintenance facilities
- Next steps

Statewide System

San Francisco – San Jose Section

History of Passenger Rail on the Corridor

1850
Cities of San Jose & San Francisco Incorporated

1864
First Passenger Rail between San Francisco and San Jose

1894
City of Palo Alto Incorporated

1925
City of San Carlos Incorporated

1950
Steam engines replaced by diesel rail cars

1992
Caltrain JPB formed

2004
Baby Bullet Service Introduced

2008
Proposition 1A Passed by CA Voters

2009
First US HSR Strategic Plan Issued

Palo Alto Historical Society

Palo Alto Station c.1894

Weimax Wines, Burlingame

Sharkzfan via Flickr

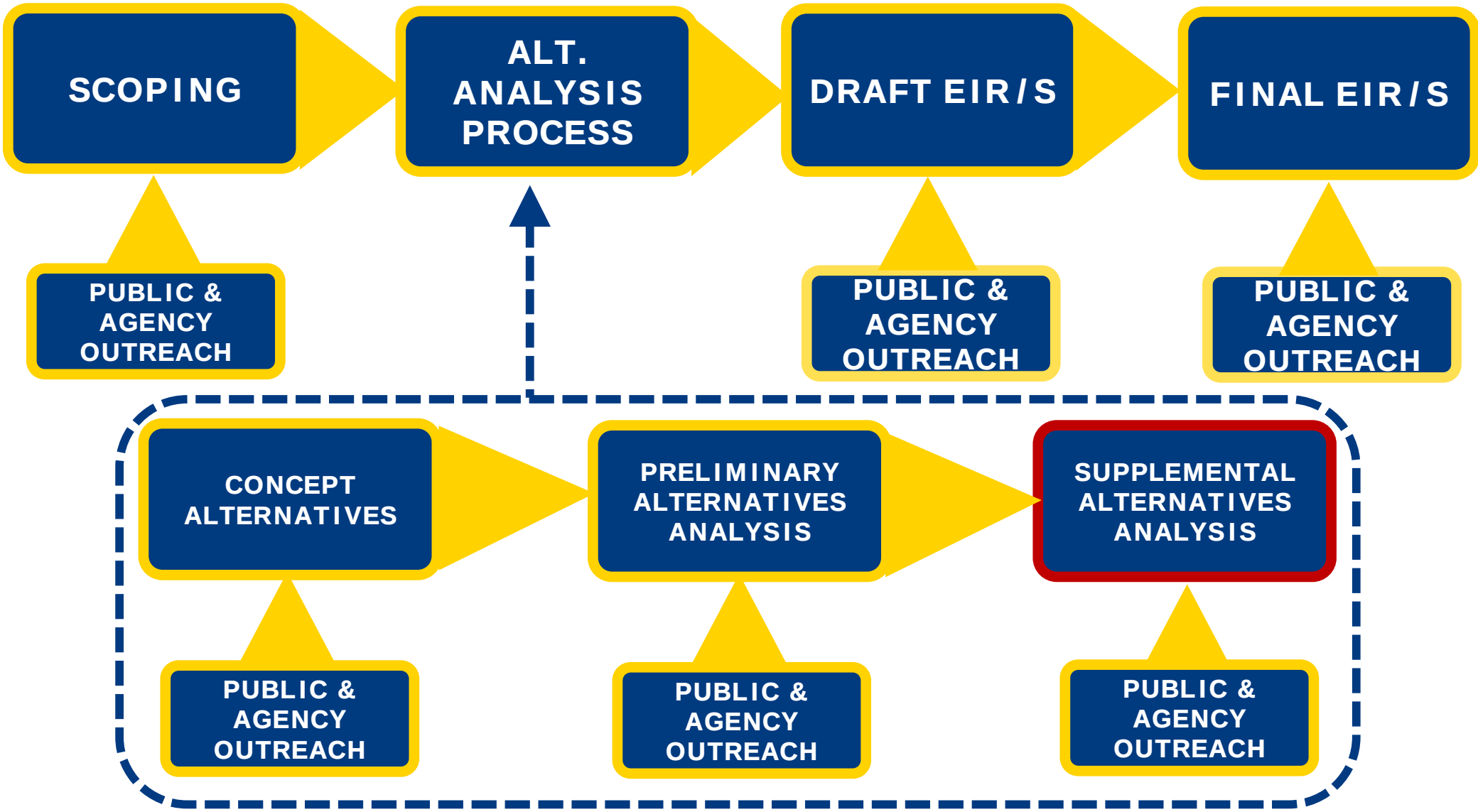
Baby Bullet c.2006

Benefits of Peninsula Rail Program

- Significant Infrastructure Already Exists
- Fed. Railroad Administration Waiver for Mixed Rail Traffic
- Signal System Upgrades
  - Positive Train Control Supports HST Construction During Caltrain Operations
- CPUC Exceptions Submitted
- Caltrain Electrification Project
  - 35% Design Complete
  - Federal Environmental Clearance

Environmental Review Process

Environmental Review Process



Engaging Stakeholders

Since April 8, 2010

4 Technical Working Group (TWG) Meetings

4 Policymaker Working Group (PWG) Meetings

32 Public Presentations, Meetings & Workshops

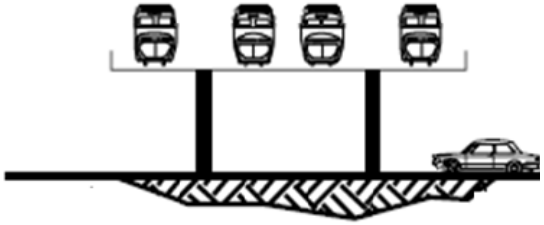
More than 1,500 members of the public have participated in outreach efforts.

Community Feedback

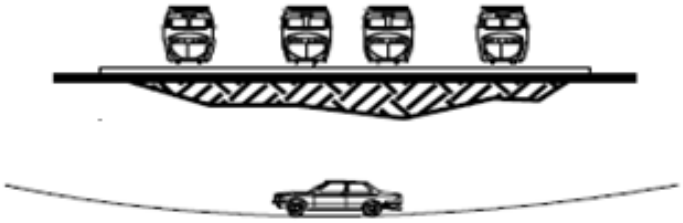
- Potential impacts to properties along ROW and overall property value
- Noise and Vibration
- Preference for below-grade options
- Keep Caltrain and “Baby Bullet” service
- Cost of the statewide system

Multiple Construction Alternatives Considered

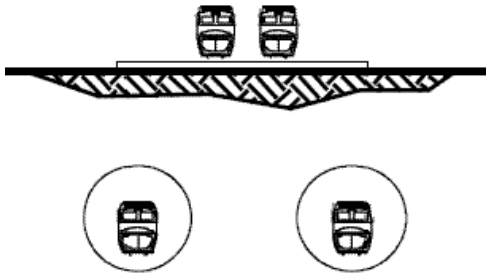
Multiple Options Considered



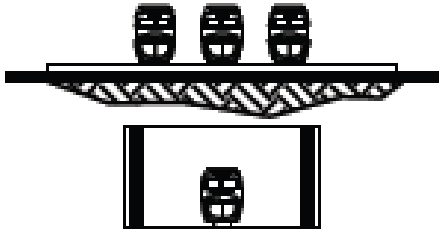
Aerial Structure



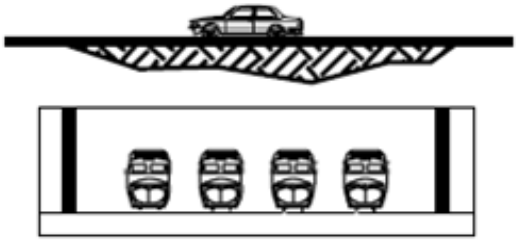
Trench



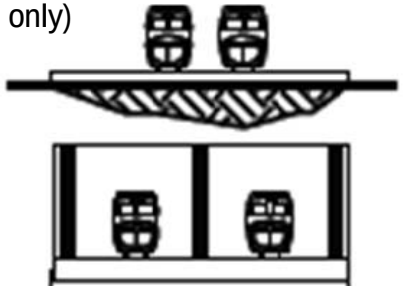
Deep Bore Tunnel (HSR only)



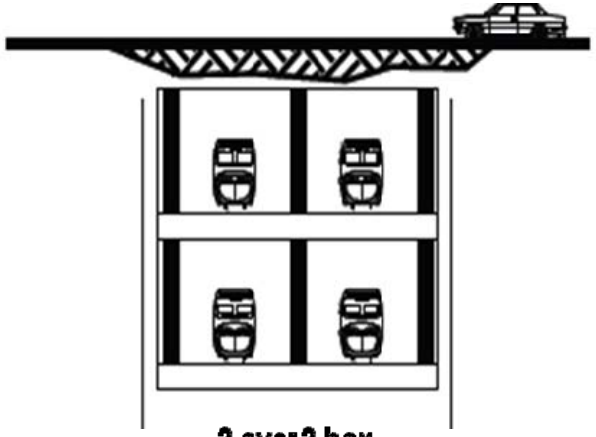
3 over 1



Cut & Cover



At Grade & Tunnel

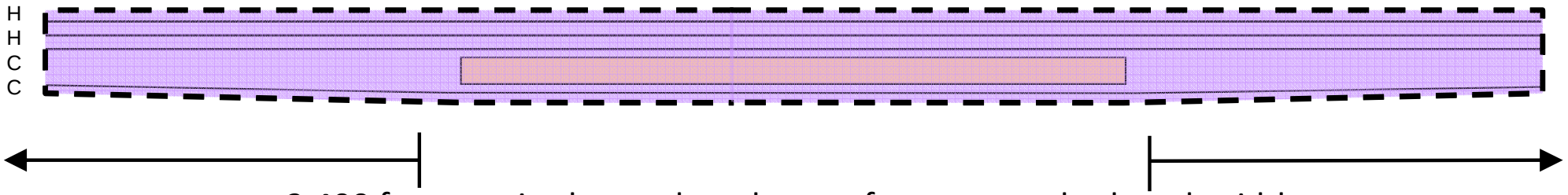


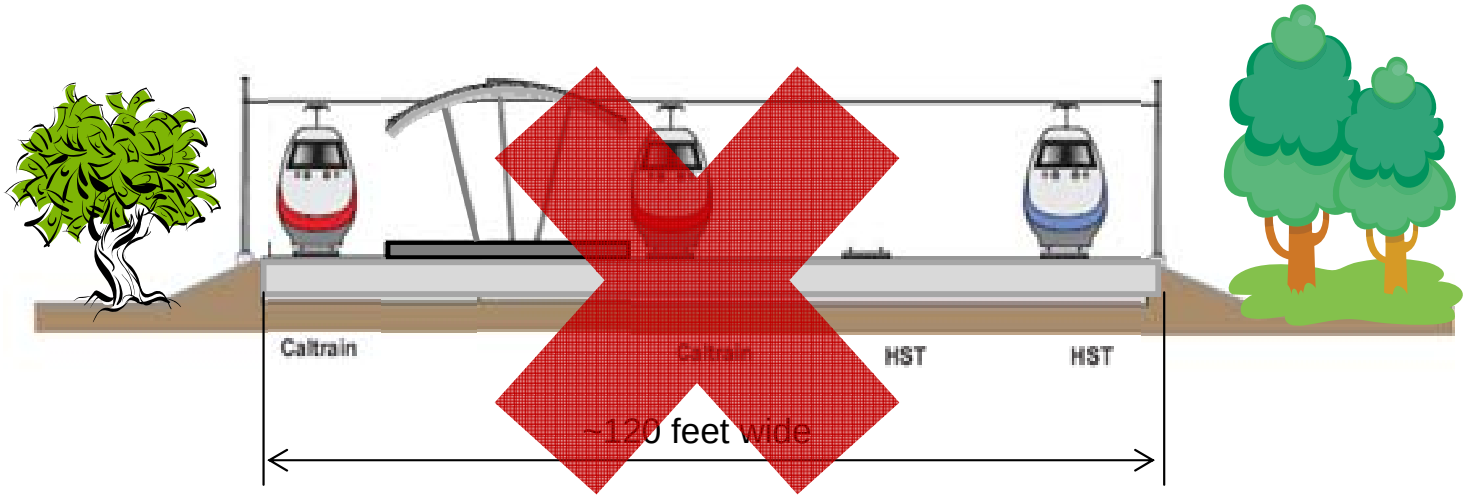
2 over 2 box

Activities to Narrow Project Footprint

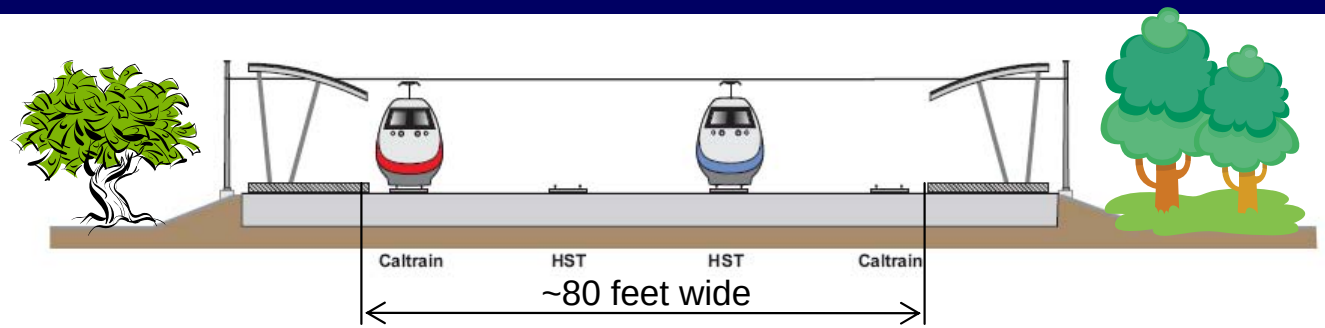
Narrower: Track Configuration & Stations

Center Platforms

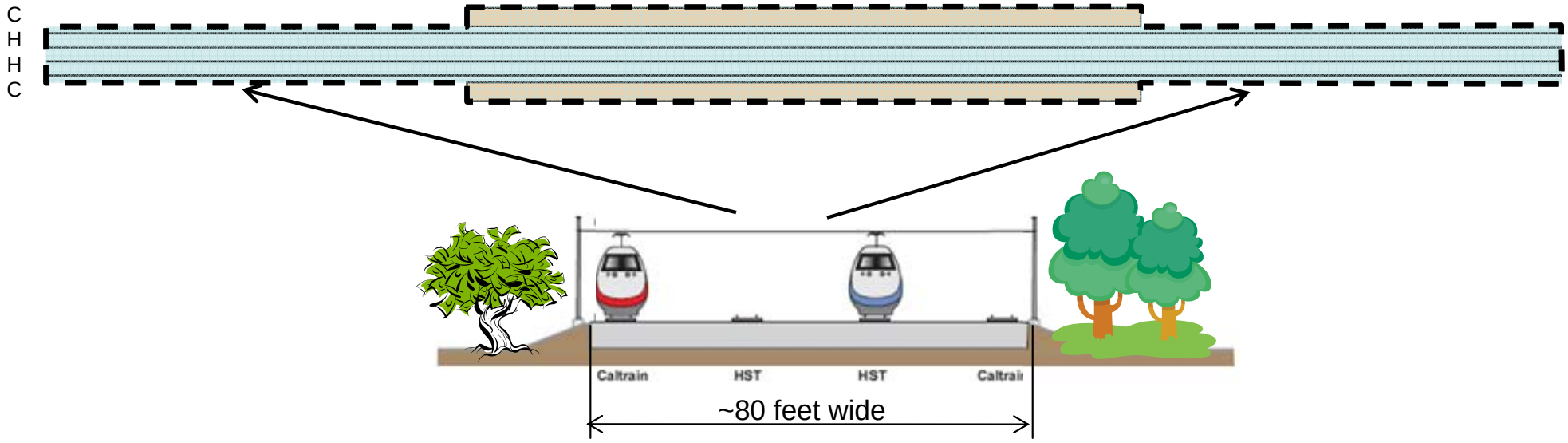


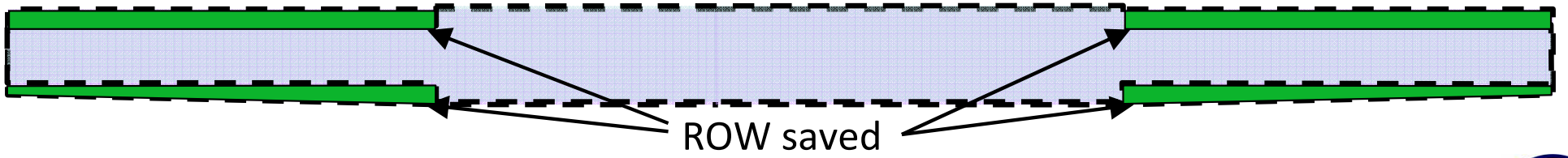


Narrower: Track Configuration & Stations

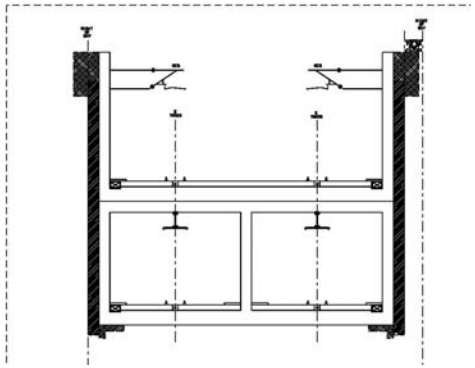


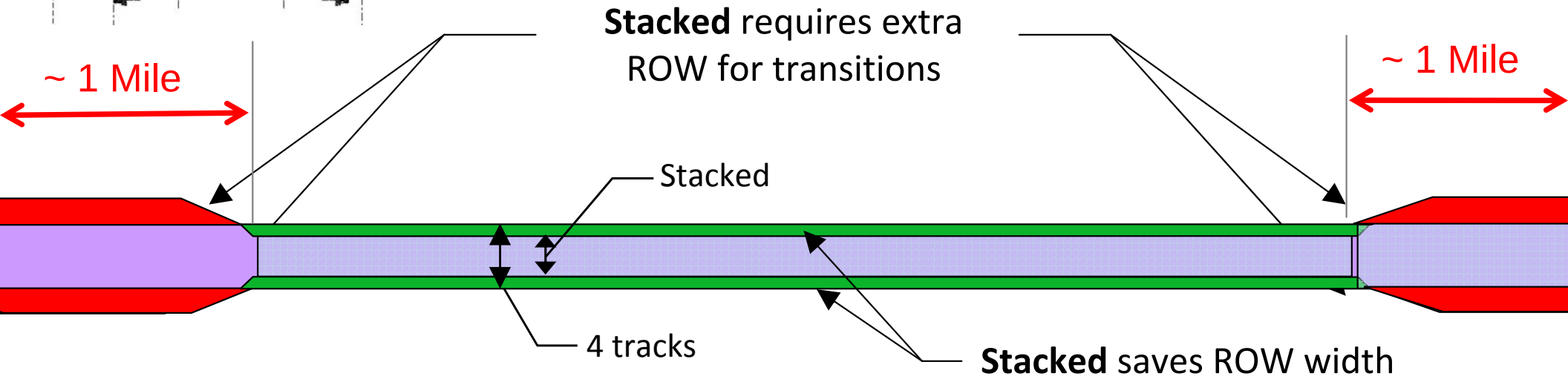
Outboard Platforms





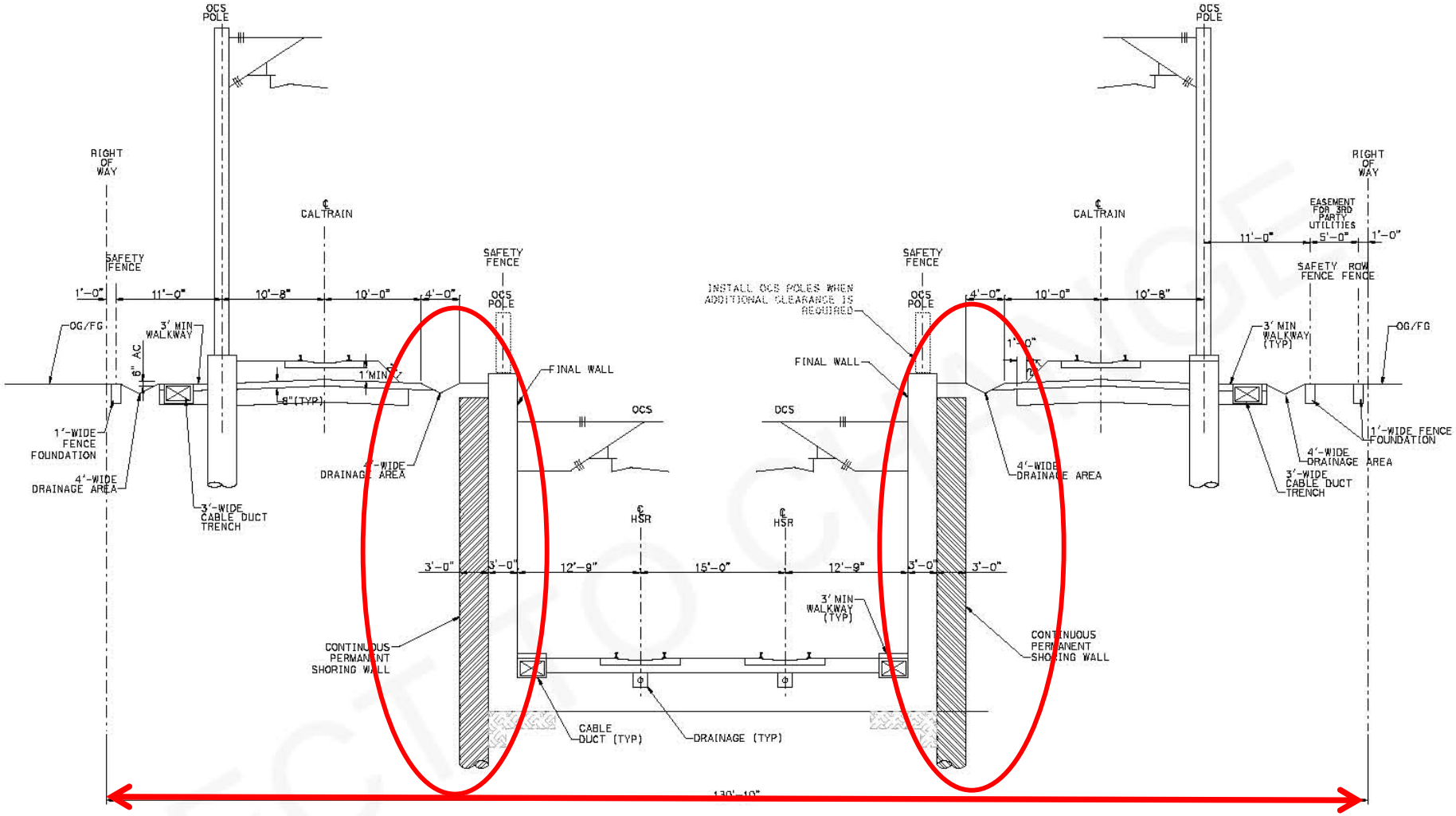
Four-track Transition vs. Stacked Transition





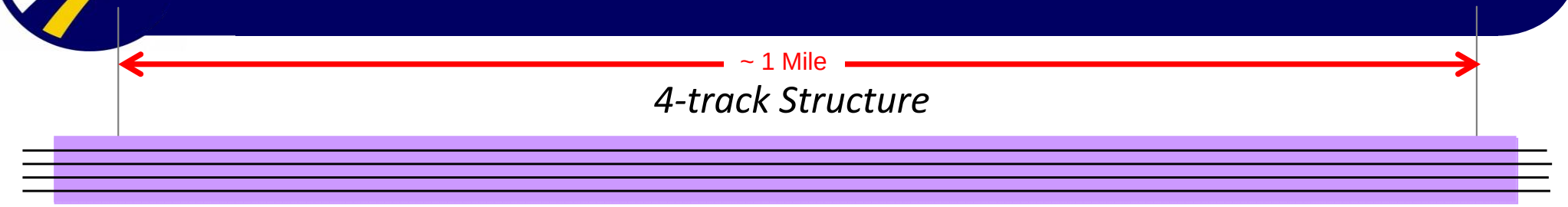
*It requires over **10.5 miles** of stacked configuration to save enough ROW to compensate for the additional ROW needed for the transitions at each end.*

Stacked Solution Requires Long and Wide Transitions

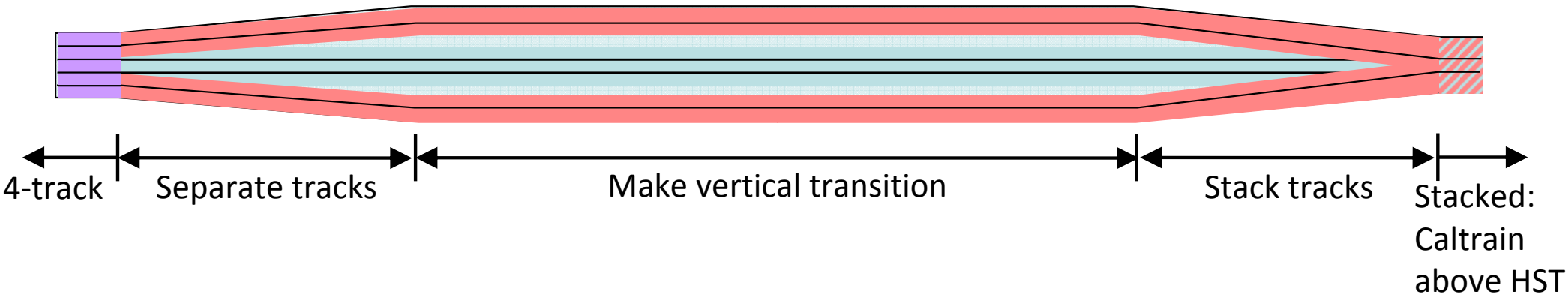


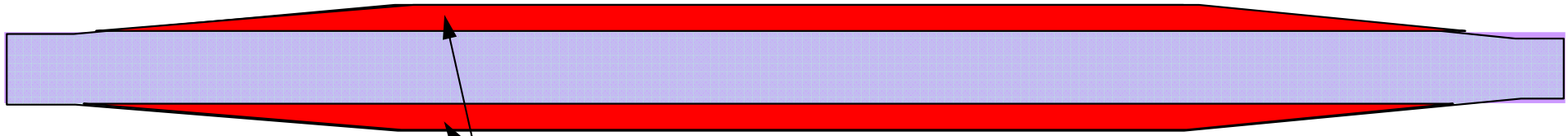
130 feet wide

ROW Requirements For Transitions



Transition for Stacked Configuration





Requires ~252,500 sq ft extra ROW
(~4.5 football fields)

4 tracks at same elevation
Caltrain only tracks
HST only tracks
Stacked: Caltrain above HST

Design Option Summary

Hybrid solutions

(stacked trench or deep bore tunnel):

- Multi-phased Construction
- Transitions are complex and lengthy
- Limits flexibility
- Could require significant ground treatments
- Effect on Caltrain
- Possible fire life safety requirements

Design Option Summary

"Traditional" solutions

(elevated, at-grade, trench):

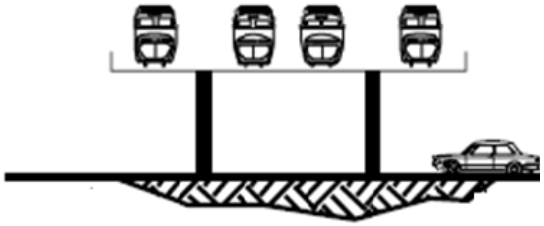
- Conventional Construction
- Maintains consistent project footprint
- Minimizes disruption to Caltrain
- Preserves operational flexibility
- Minimizes construction costs
- Fits community needs

Design Option Status

	Real Estate Impact	Transitioning (ROW)	Freight sidings	Other Environment	Safety / Evacuation	Interoperability	Constructability/ Inconvenience	Costs
Trench (4 track)								
Cut & cover (4 track)								
Deep Bore Tunnel (HST only)			N/A					
Aerial (4 track)								
At Grade (4 track)								
3 At Grade over 1 track tunnel								
At Grade over 2 track tunnel								
2 over 2 "hybrid" stacked tunnel								

Based on a preliminary review of potential alternatives and subject to further study in the Draft EIR/S.

Multiple Options Considered



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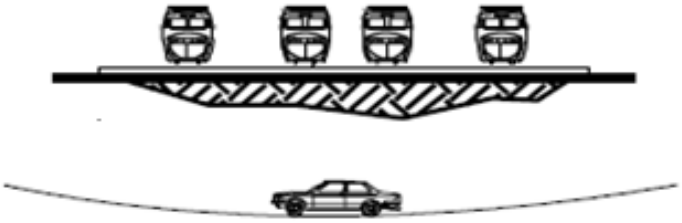
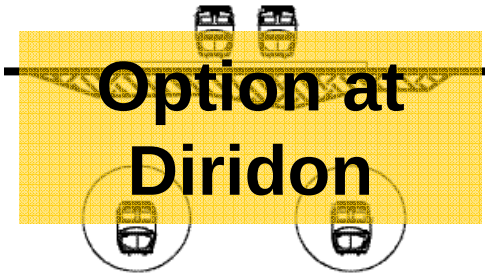


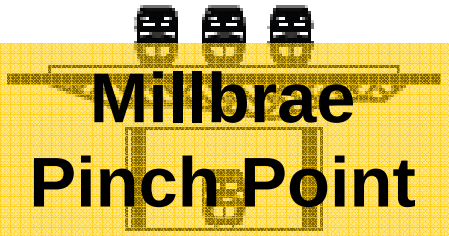
Trench

Option at Diridon



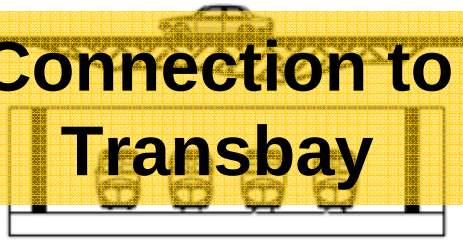
Deep Bore Tunnel (HSR only)

Millbrae Pinch Point

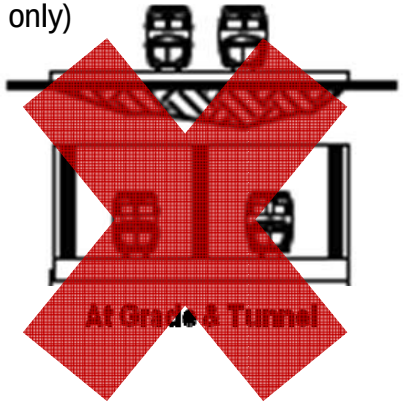


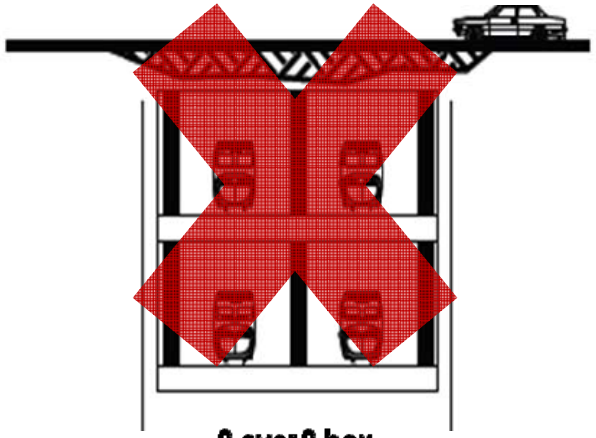
3 over 1

Connection to Transbay



Cut & Cover



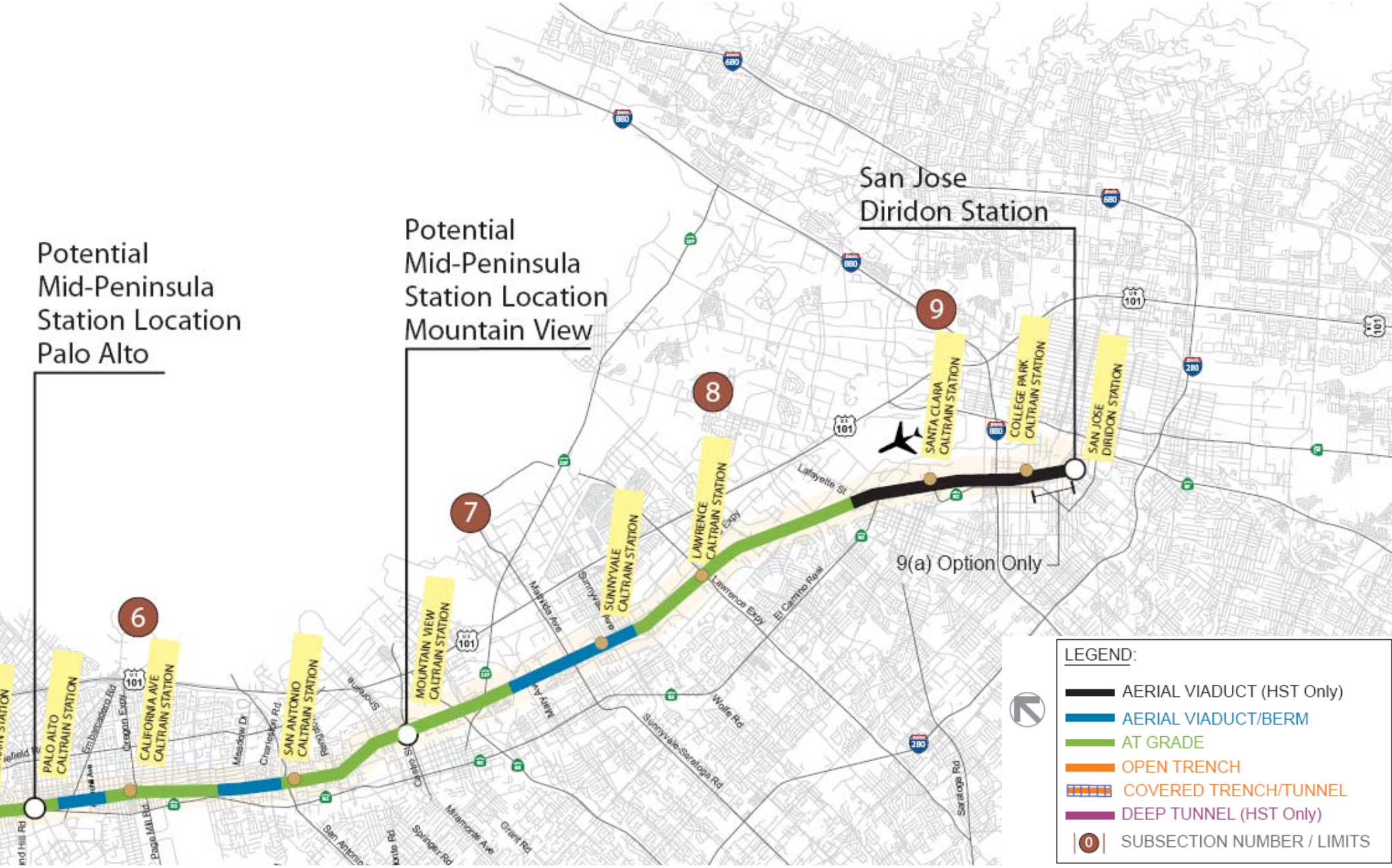


2 over 2 box

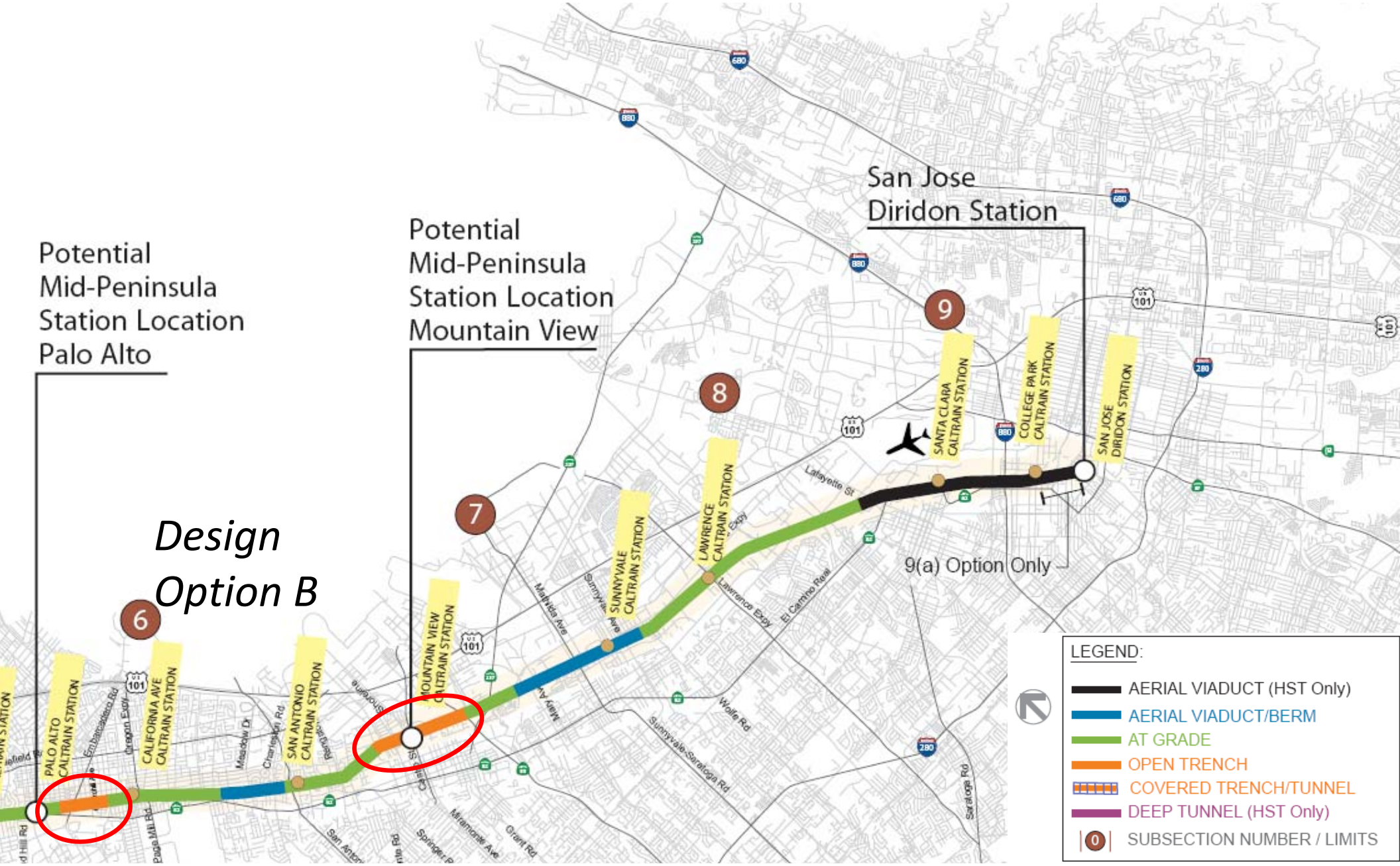
Design Option A

Design Option B

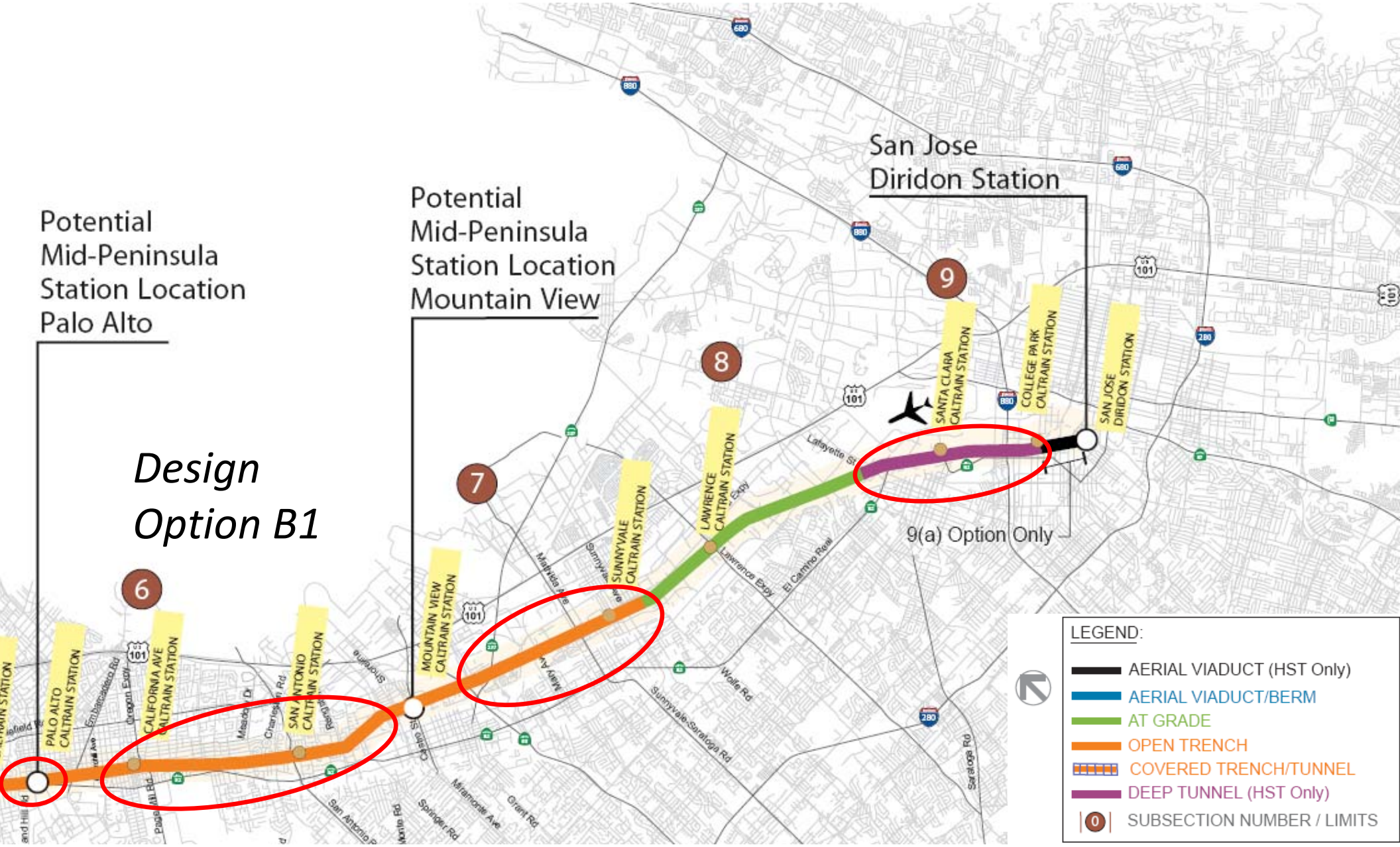
Design Option A



Design Option B



Design Option B1



Continued Evaluation of Stations

- San Francisco (4th and King and Transbay Transit Center)
- San Francisco Airport Connection (Millbrae)
- Potential Mid-Peninsula Station:
  - Redwood City
  - Palo Alto
  - Mountain View
- San Jose Diridon Station (elevated option)

Evaluation of Maintenance Facility

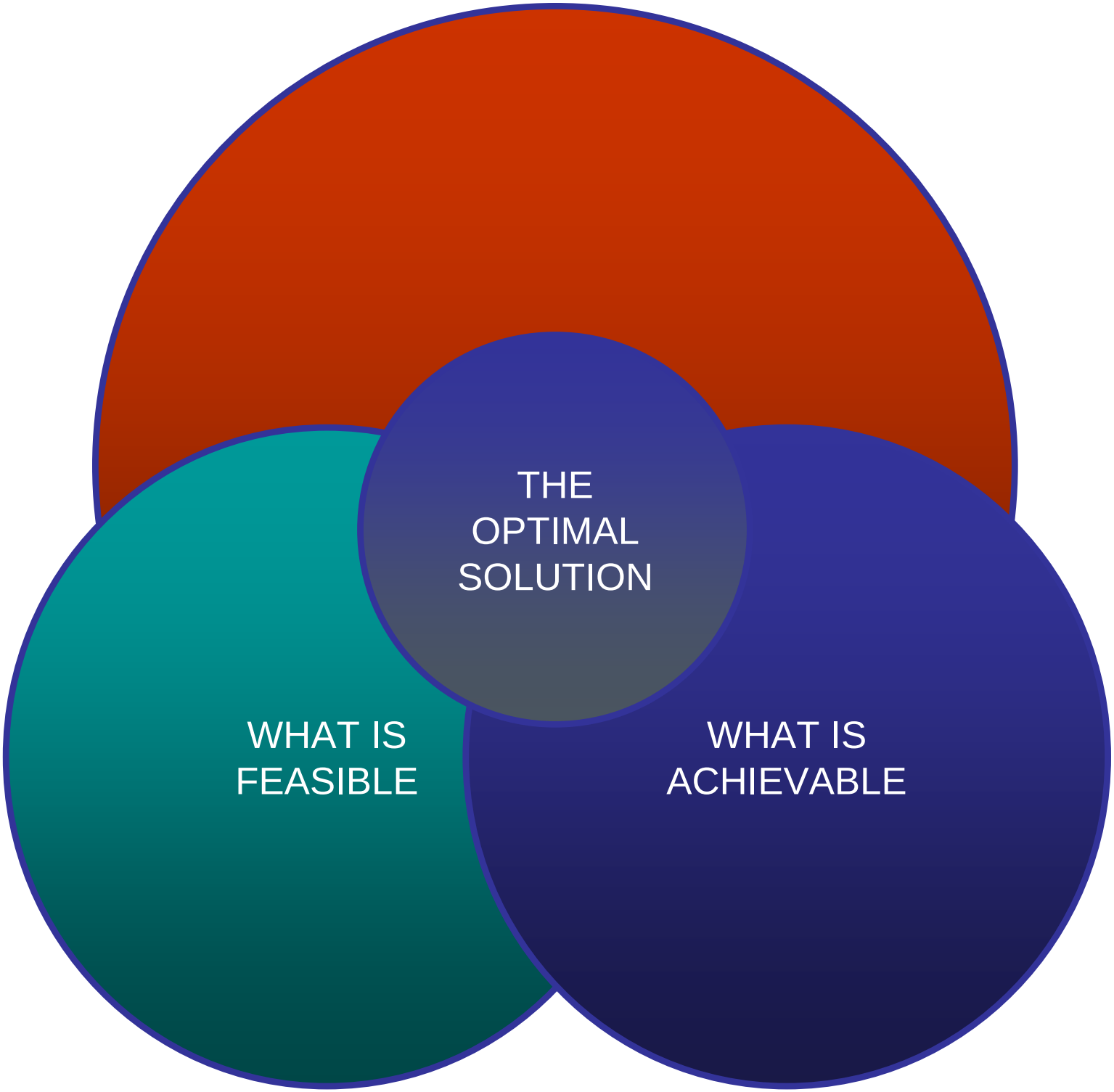
- Needs to be close to SF terminal
  - Approximately 100 Acres
- Three sites initially evaluated
  - Port of San Francisco: Piers 90-94 (40 Acres)
  - San Francisco Int'l Airport (100 Acres)
  - Brisbane/Bayshore (100 Acres)
- Recommend Brisbane / Bayshore location for continued evaluation.

Staff Recommendation

Continue engineering and environmental evaluation of Design Options A, B and B1 as the basis of the Project Description for the EIR / EIS.

Next Steps

- Continue Dialogue with Communities
  - TWG
  - PWG
  - Stations Workshops
- Complete 15% Engineering
- Conduct Operations Planning
- Study Environmental Impacts of different options
- Issue Draft EIR/EIS: December 2010


THE
OPTIMAL
SOLUTION
WHAT IS
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WHAT IS
ACHIEVABLE